Fig. 1

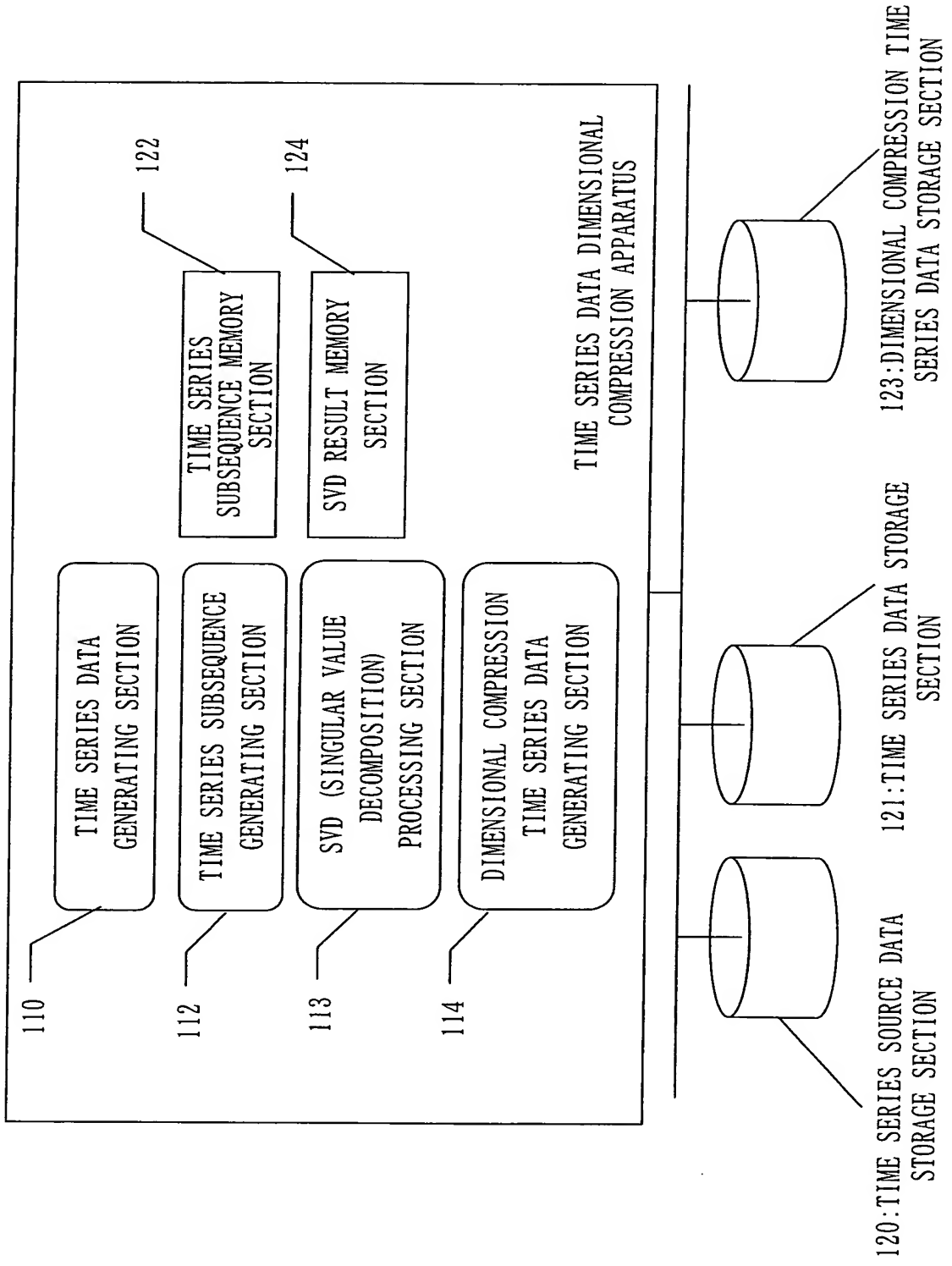

TIME SERIES DATA DIMENSIONAL COMPRESSION APPARATUS
TIME SERIES DATA GENERATING SECTION
TIME SERIES SUBSEQUENCE GENERATING SECTION
SVD (SINGULAR VALUE DECOMPOSITION) PROCESSING SECTION
DIMENSIONAL COMPRESSION TIME SERIES DATA GENERATING SECTION
TIME SERIES SUBSEQUENCE MEMORY SECTION
SVD RESULT MEMORY SECTION
110
112
113
114
122
124
120:TIME SERIES SOURCE DATA STORAGE SECTION
121:TIME SERIES DATA STORAGE SECTION
123:DIMENSIONAL COMPRESSION TIME SERIES DATA STORAGE SECTION

Fig. 2

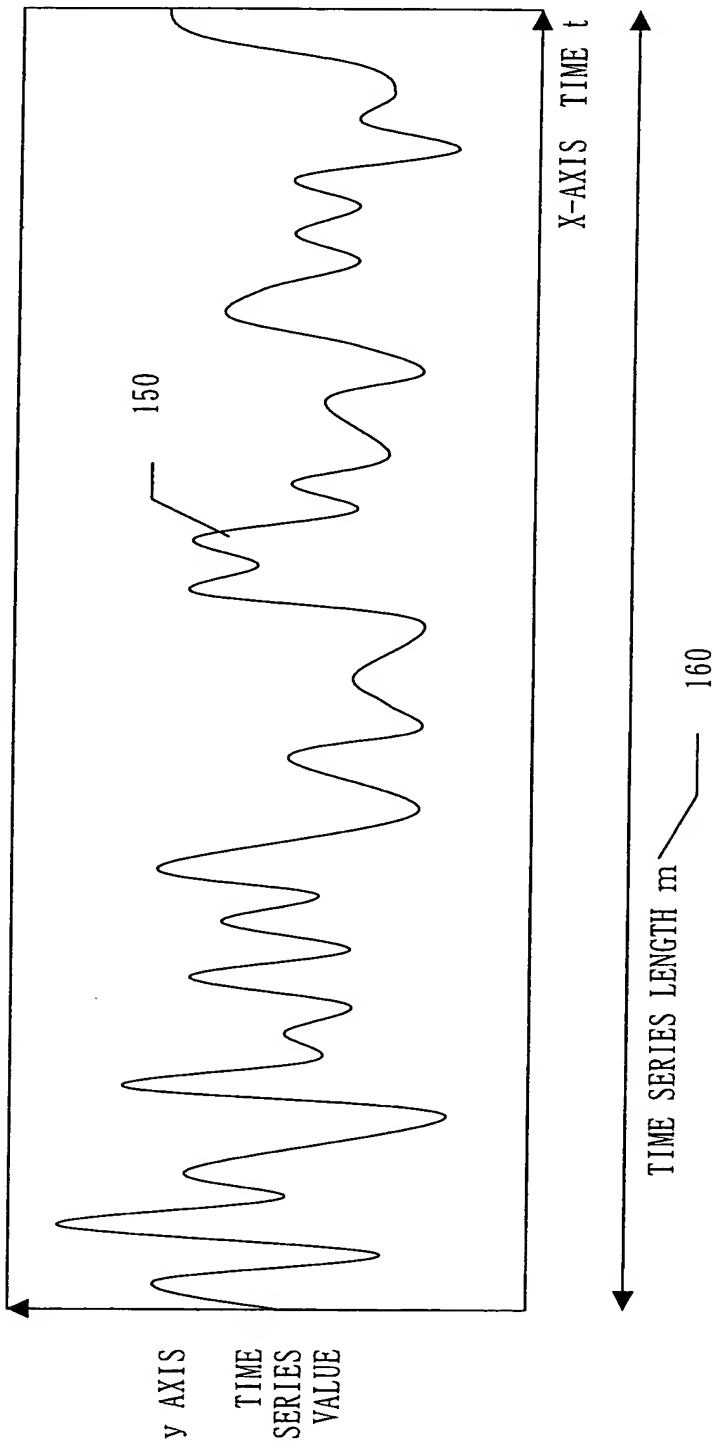

X-AXIS TIME t
150
160
TIME SERIES LENGTH m
y AXIS
TIME SERIES VALUE

Fig. 3

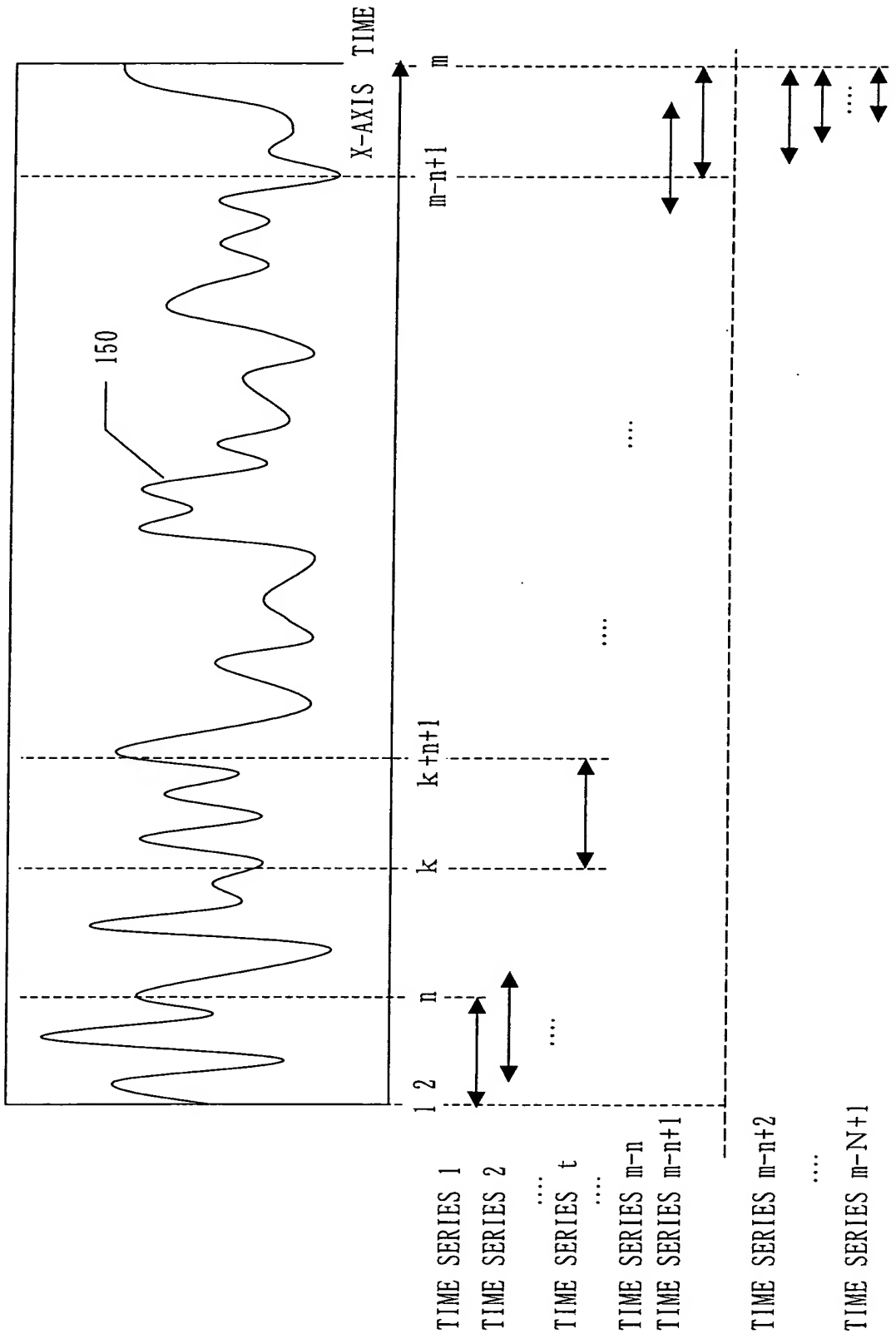

X-AXIS TIME
150
m
m-n+1
k+n+1
k
n
1 2
TIME SERIES 1
TIME SERIES 2
TIME SERIES t
TIME SERIES m-n
TIME SERIES m-n+1
TIME SERIES m-n+2
TIME SERIES m-N+1

Fig. 4

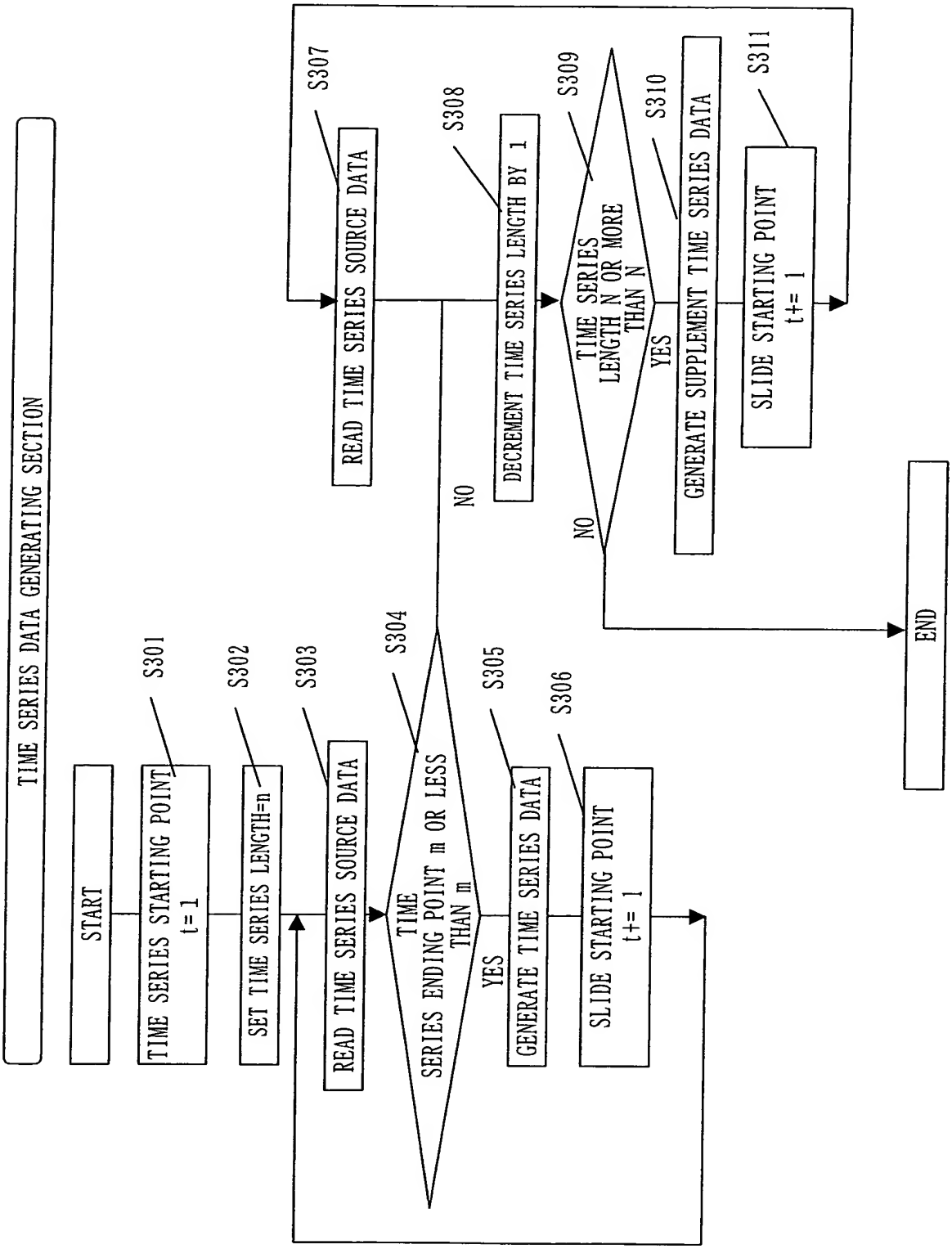

TIME SERIES DATA GENERATING SECTION
START
S301
TIME SERIES STARTING POINT t = 1
S302
SET TIME SERIES LENGTH=n
S303
READ TIME SERIES SOURCE DATA
S304
TIME SERIES ENDING POINT m OR LESS THAN m
NO
YES
S305
GENERATE TIME SERIES DATA
S306
SLIDE STARTING POINT t+= 1
S307
READ TIME SERIES SOURCE DATA
S308
DECREMENT TIME SERIES LENGTH BY 1
S309
TIME SERIES LENGTH N OR MORE THAN N
NO
YES
S310
GENERATE SUPPLEMENT TIME SERIES DATA
S311
SLIDE STARTING POINT t+= 1
END

Fig. 5

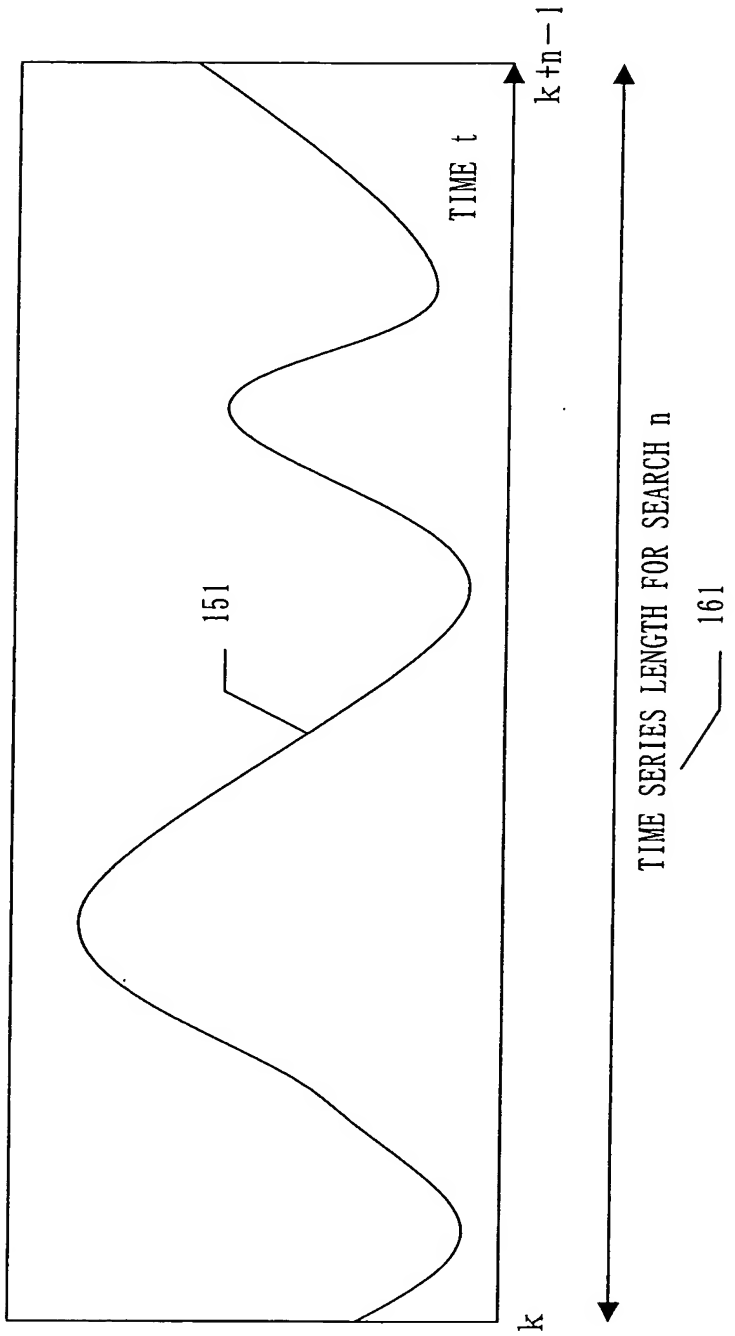


Fig. 6

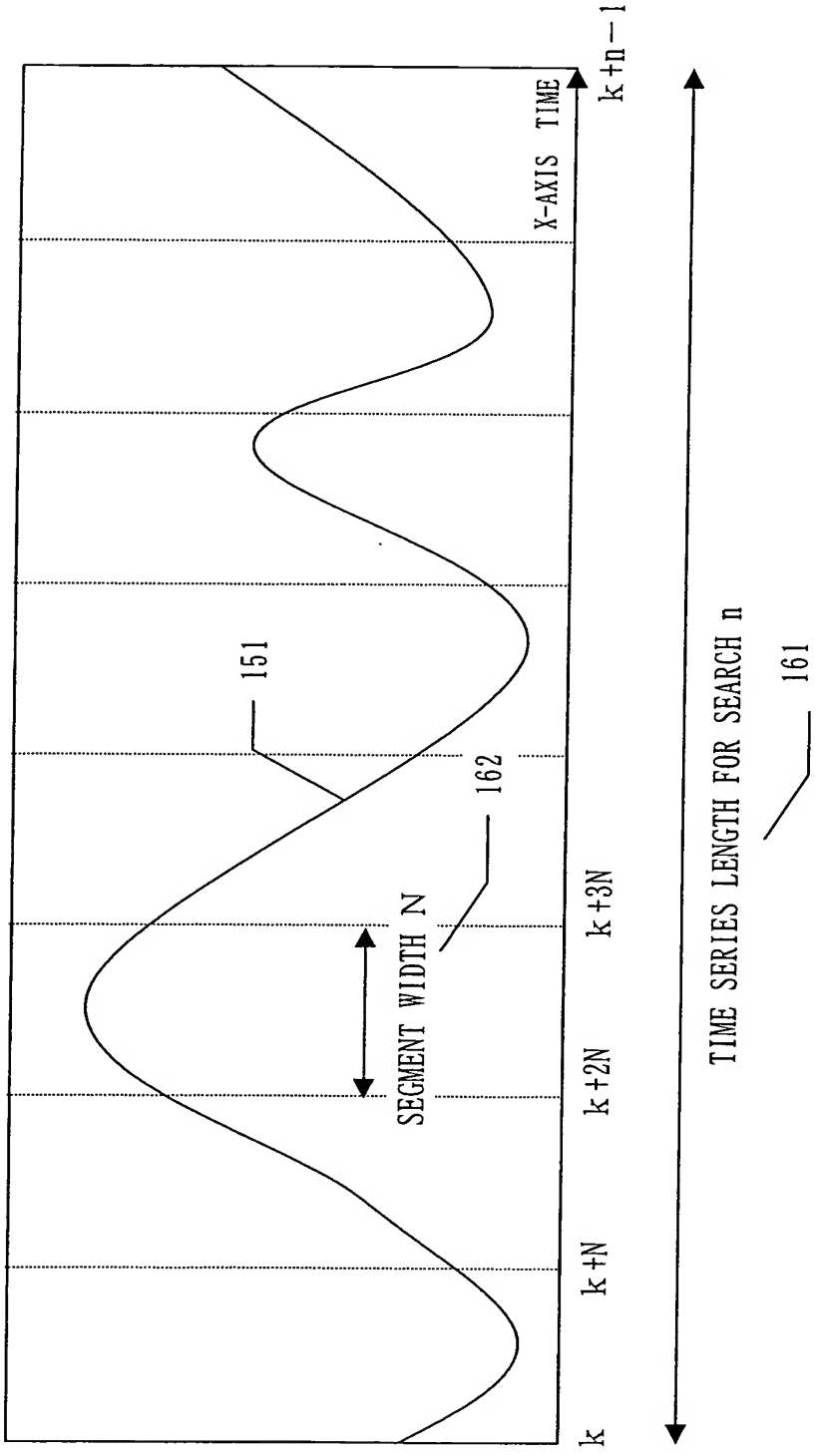

X-AXIS TIME
k
k+N
k+2N
k+3N
k+n−1
151
162
SEGMENT WIDTH N
TIME SERIES LENGTH FOR SEARCH n
161

Fig. 7

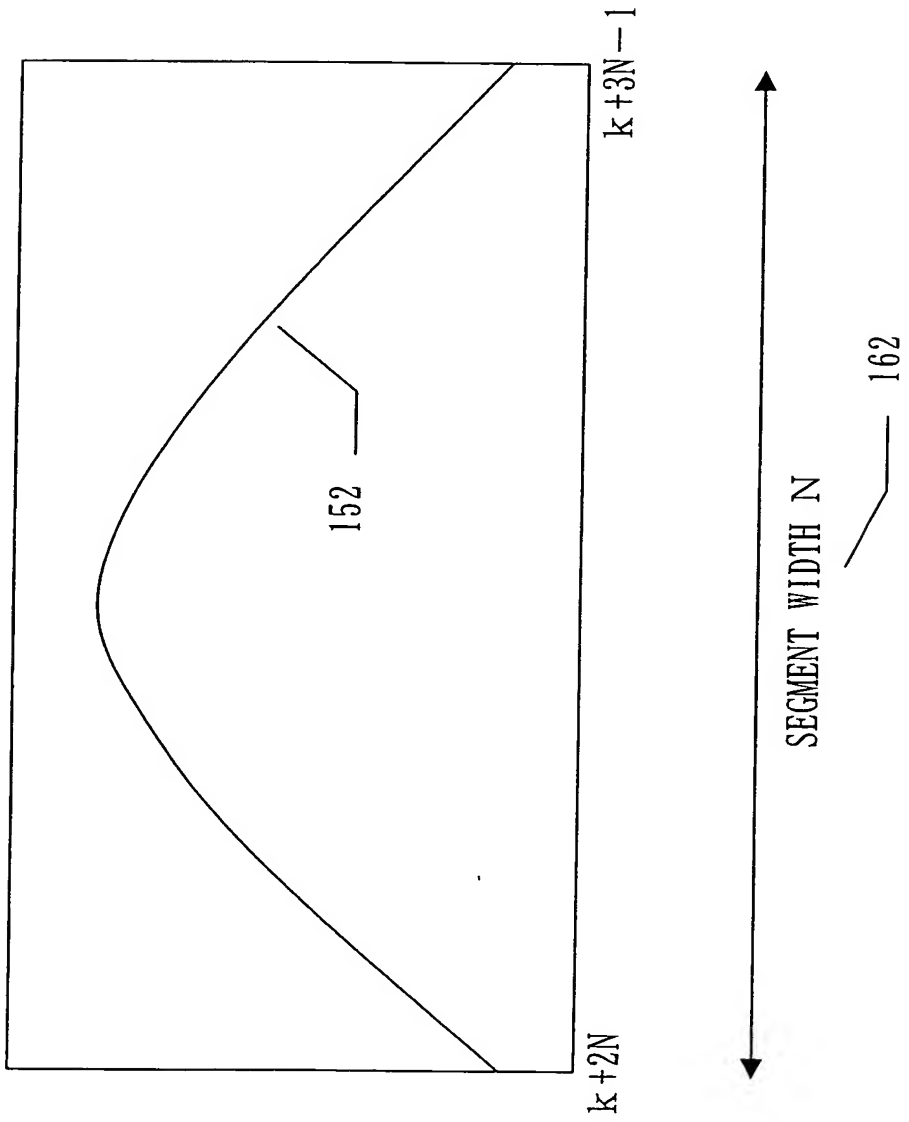


Fig. 8

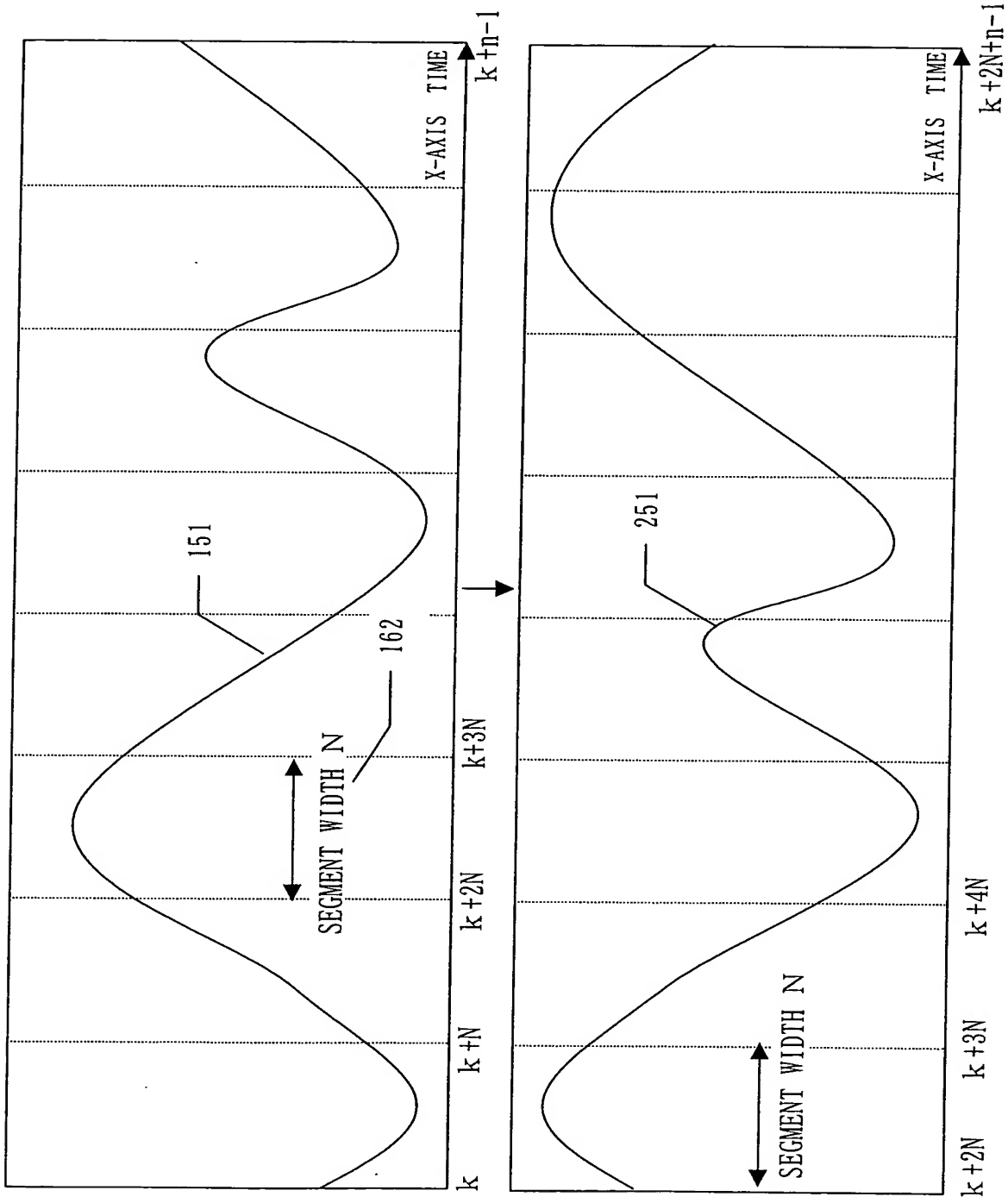

X-AXIS TIME
k+n-1
151
162
SEGMENT WIDTH N
k+3N
k+2N
k+N
k
251
X-AXIS TIME
k+2N+n-1
k+4N
k+3N
k+2N
SEGMENT WIDTH N

Fig. 9

TIME SERIES SUBSEQUENCE STARTING POINT	EIGENVALUE (s_1)	VALUE OF ELEMENT OF u_1
1	2904.518	0.04495
2	2904.518	0.04497
...	...	...
r	2904.518	0.04350
...	...	...
m-N	2904.518	0.04371
m-N+1	2904.518	0.04385

Fig. 10

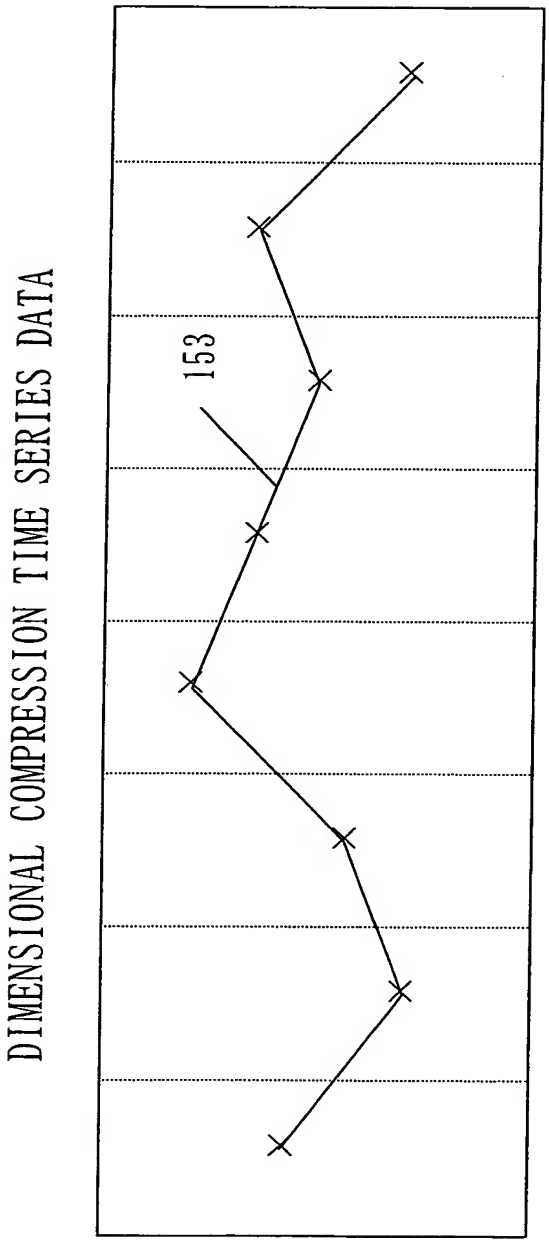


Fig. 11

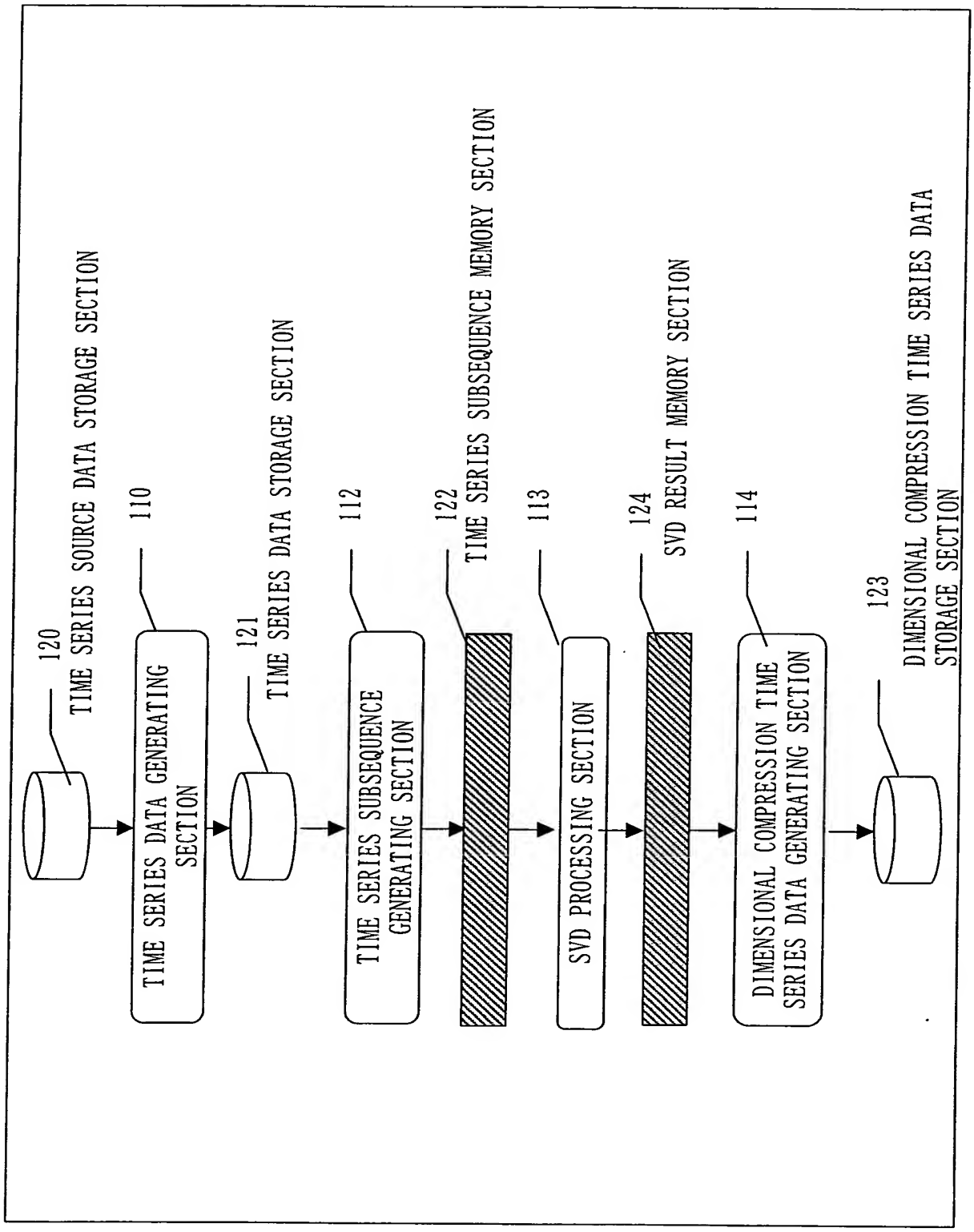

120
TIME SERIES SOURCE DATA STORAGE SECTION
110
TIME SERIES DATA GENERATING SECTION
121
TIME SERIES DATA STORAGE SECTION
112
TIME SERIES SUBSEQUENCE GENERATING SECTION
122
TIME SERIES SUBSEQUENCE MEMORY SECTION
113
SVD PROCESSING SECTION
124
SVD RESULT MEMORY SECTION
114
DIMENSIONAL COMPRESSION TIME SERIES DATA GENERATING SECTION
123
DIMENSIONAL COMPRESSION TIME SERIES DATA STORAGE SECTION

Fig. 12

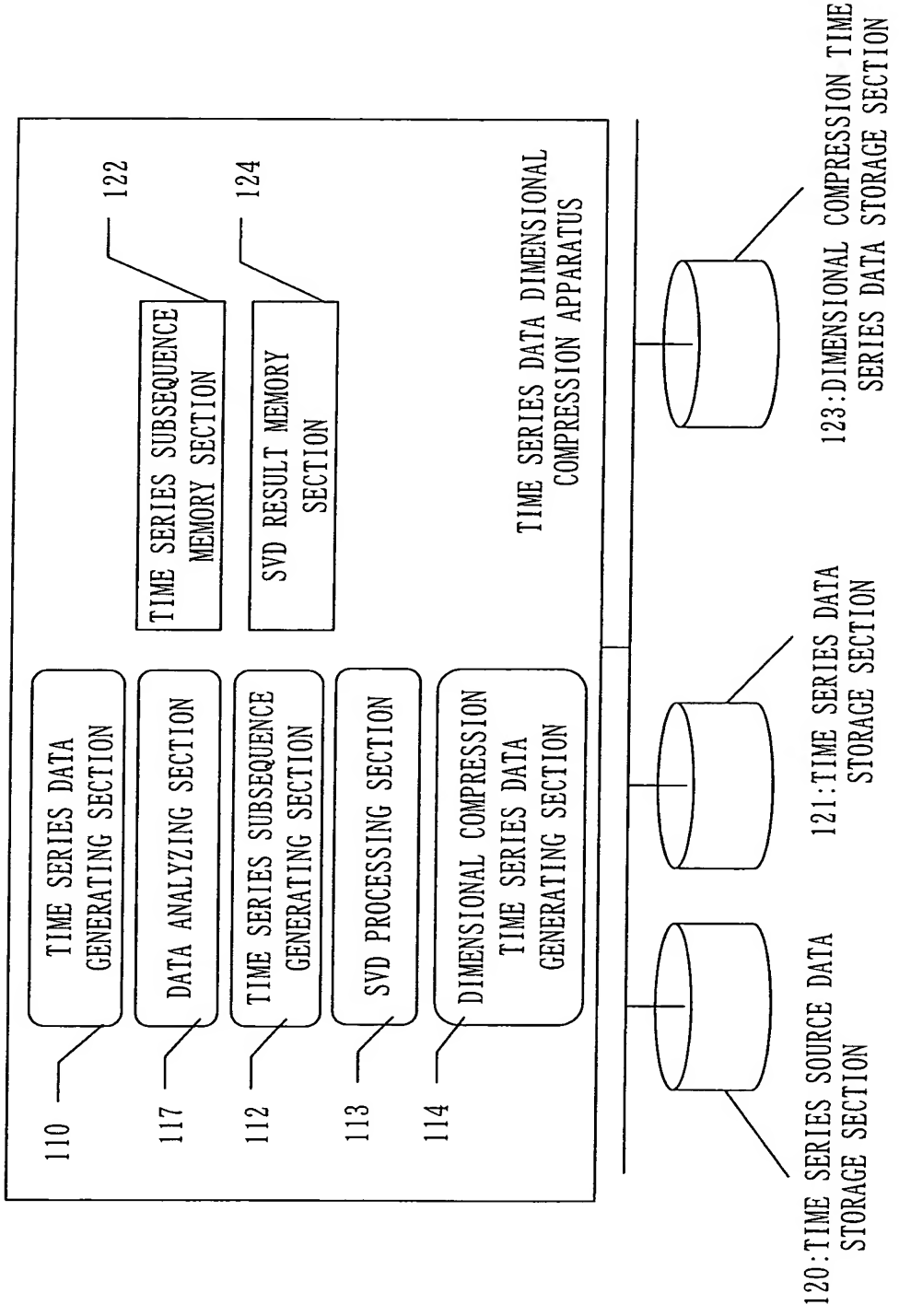

TIME SERIES DATA DIMENSIONAL COMPRESSION APPARATUS
TIME SERIES DATA GENERATING SECTION
DATA ANALYZING SECTION
TIME SERIES SUBSEQUENCE GENERATING SECTION
SVD PROCESSING SECTION
DIMENSIONAL COMPRESSION TIME SERIES DATA GENERATING SECTION
TIME SERIES SUBSEQUENCE MEMORY SECTION
SVD RESULT MEMORY SECTION
110
117
112
113
114
122
124
120:TIME SERIES SOURCE DATA STORAGE SECTION
121:TIME SERIES DATA STORAGE SECTION
123:DIMENSIONAL COMPRESSION TIME SERIES DATA STORAGE SECTION

Fig. 13

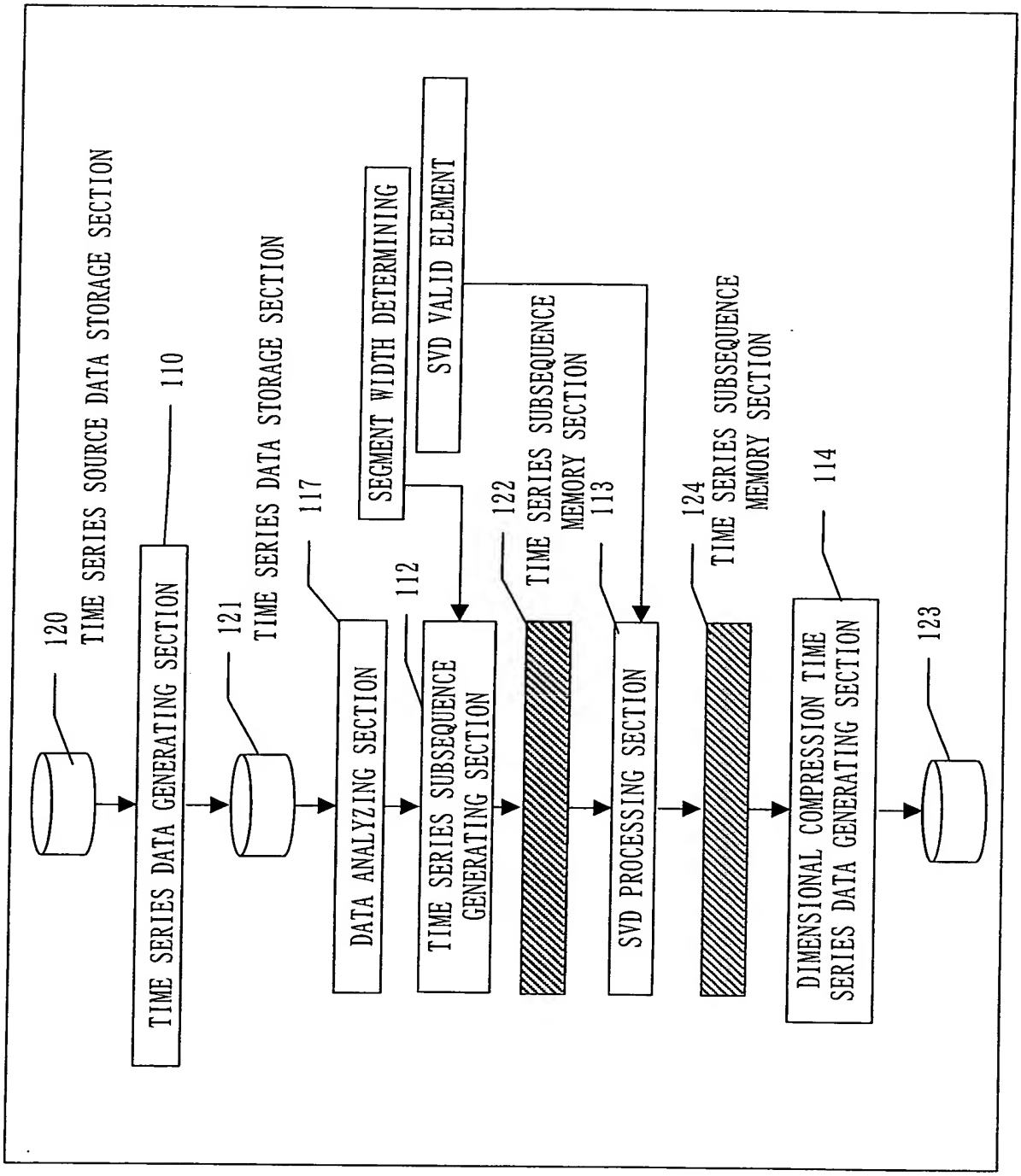

120
TIME SERIES SOURCE DATA STORAGE SECTION
TIME SERIES DATA GENERATING SECTION
110
121
TIME SERIES DATA STORAGE SECTION
117
DATA ANALYZING SECTION
SEGMENT WIDTH DETERMINING
SVD VALID ELEMENT
112
TIME SERIES SUBSEQUENCE GENERATING SECTION
122
TIME SERIES SUBSEQUENCE MEMORY SECTION
113
SVD PROCESSING SECTION
124
TIME SERIES SUBSEQUENCE MEMORY SECTION
114
DIMENSIONAL COMPRESSION TIME SERIES DATA GENERATING SECTION
123

Fig. 14

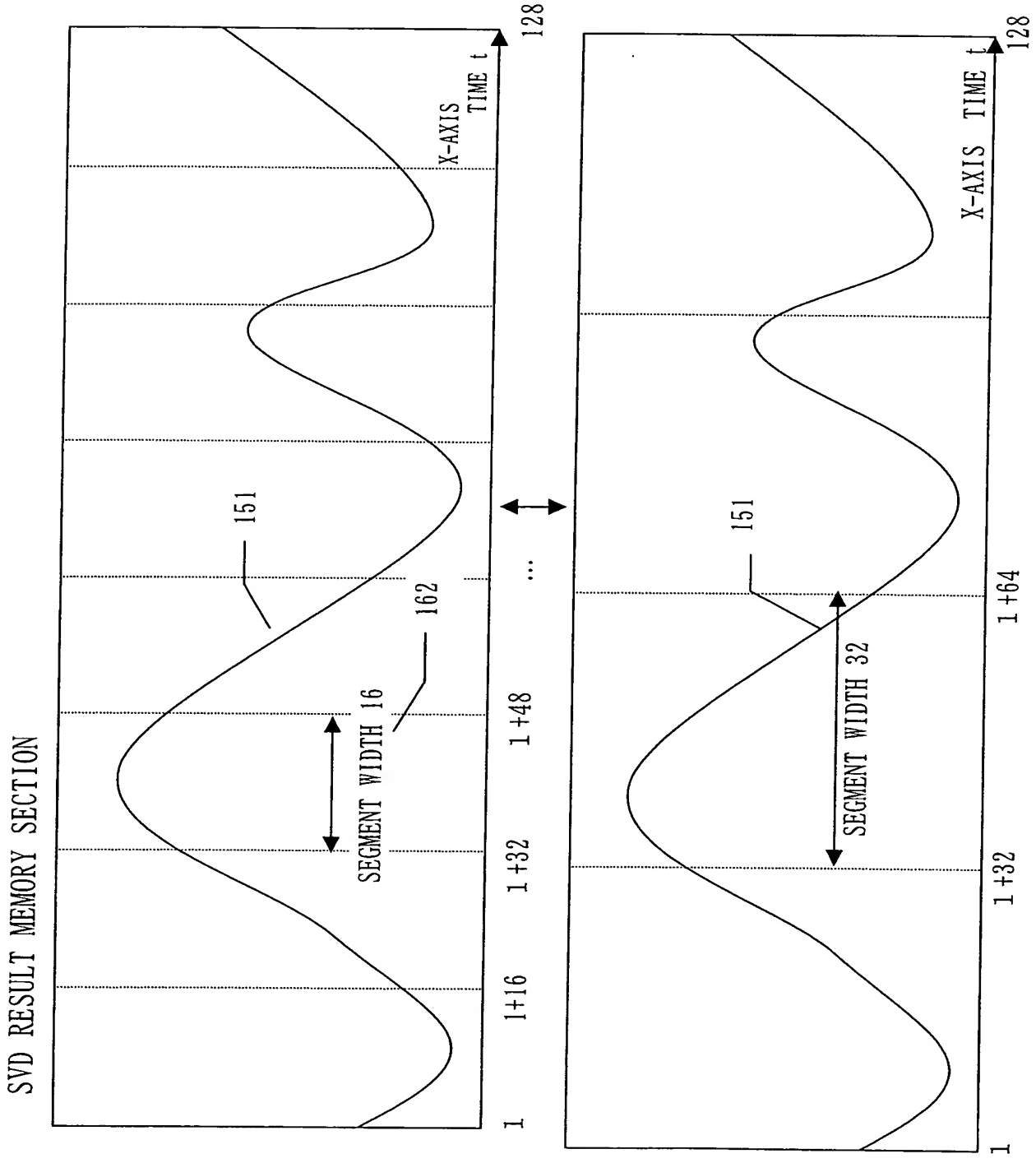

SVD RESULT MEMORY SECTION
X-AXIS TIME t
128
151
162
SEGMENT WIDTH 16
1
1+16
1+32
1+48
...
X-AXIS TIME t
128
151
SEGMENT WIDTH 32
1
1+32
1+64

Fig. 15

TIME SERIES SUBSEQUENCE STARTING POINT	EIGENVALUE (s_1)	VALUE OF ELEMENT OF u_1	EIGENVALUE (s_2)	VALUE OF ELEMENT OF u_2
1	2904.518	0.04495	458.845	-0.05151
2	2904.518	0.04497	458.845	-0.05616
...	...	...	...	...
r150	2904.518	0.04350	458.845	0.04443
...	...	...	...	...
m-N	2904.518	0.04371	458.845	0.02856
m-N+1	2904.518	0.04385	211.45	0.01931

Fig. 16

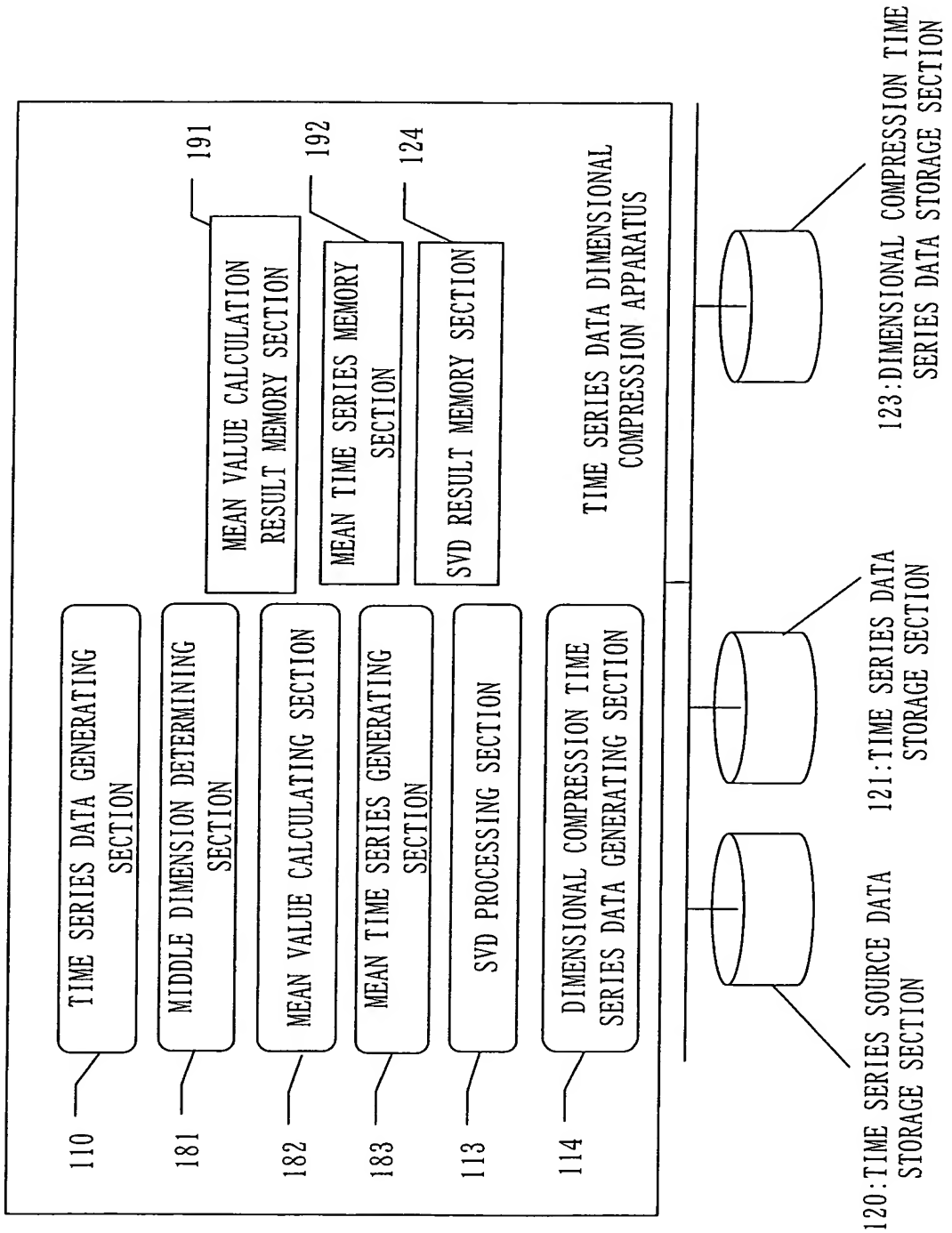

TIME SERIES DATA DIMENSIONAL COMPRESSION APPARATUS
TIME SERIES DATA GENERATING SECTION
MIDDLE DIMENSION DETERMINING SECTION
MEAN VALUE CALCULATING SECTION
MEAN TIME SERIES GENERATING SECTION
SVD PROCESSING SECTION
DIMENSIONAL COMPRESSION TIME SERIES DATA GENERATING SECTION
MEAN VALUE CALCULATION RESULT MEMORY SECTION
MEAN TIME SERIES MEMORY SECTION
SVD RESULT MEMORY SECTION
110
181
182
183
113
114
191
192
124
120:TIME SERIES SOURCE DATA STORAGE SECTION
121:TIME SERIES DATA STORAGE SECTION
123:DIMENSIONAL COMPRESSION TIME SERIES DATA STORAGE SECTION

Fig. 17

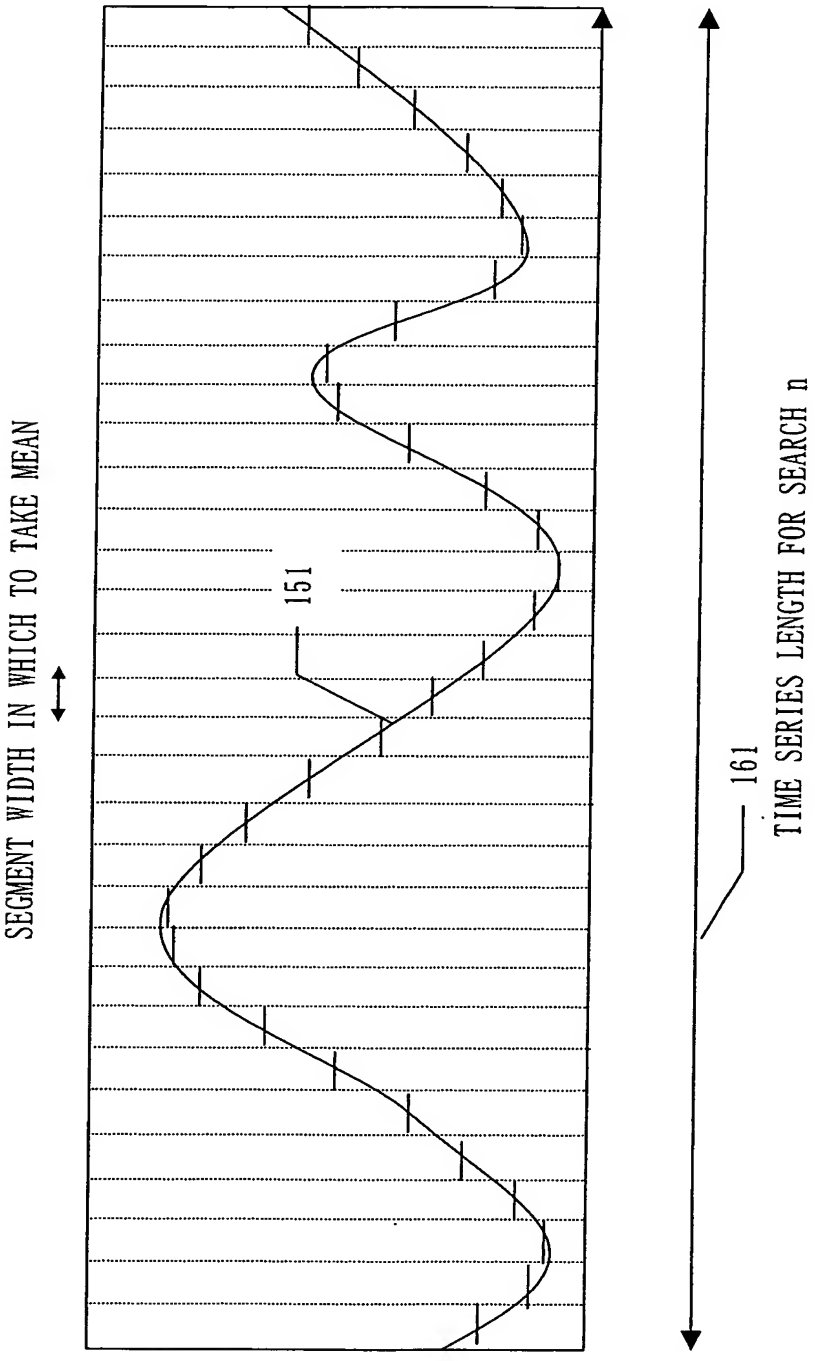

SEGMENT WIDTH IN WHICH TO TAKE MEAN
151
161
TIME SERIES LENGTH FOR SEARCH n

Fig. 18

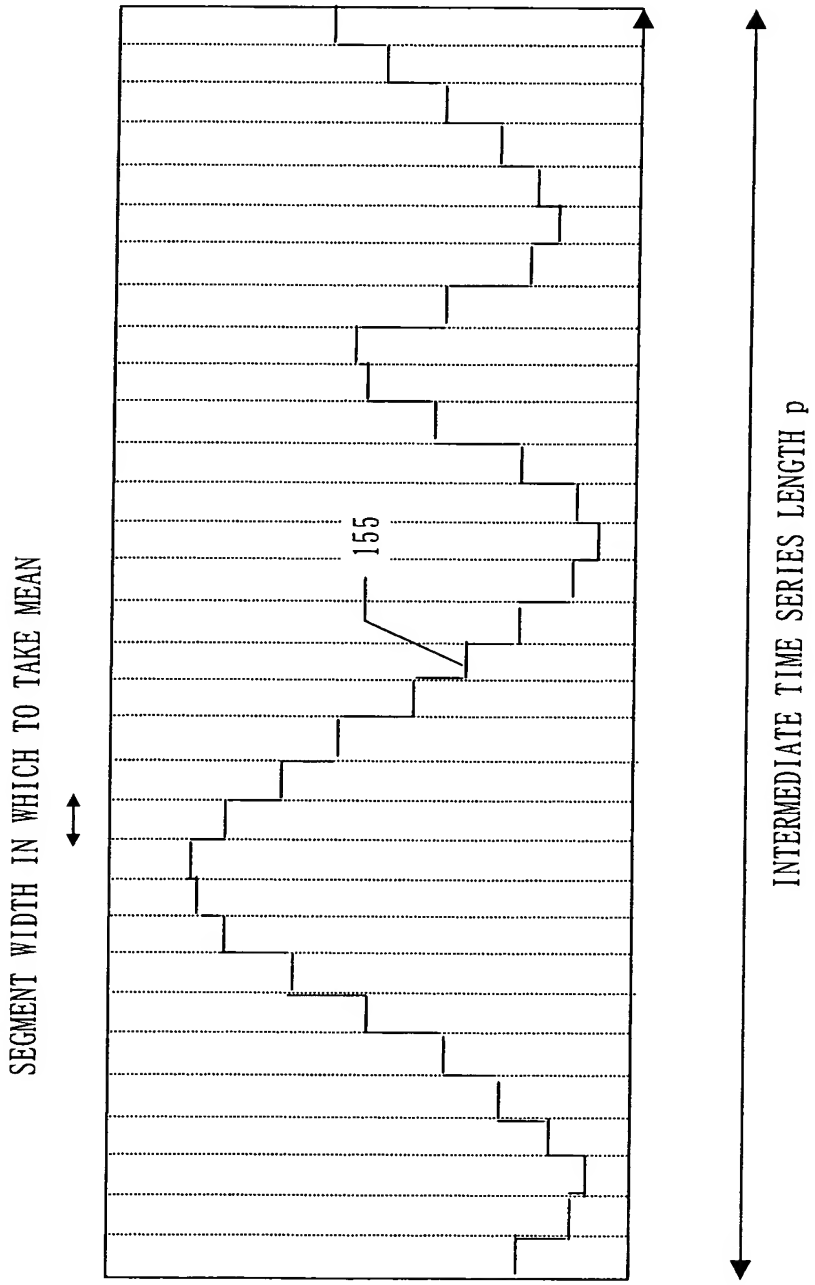
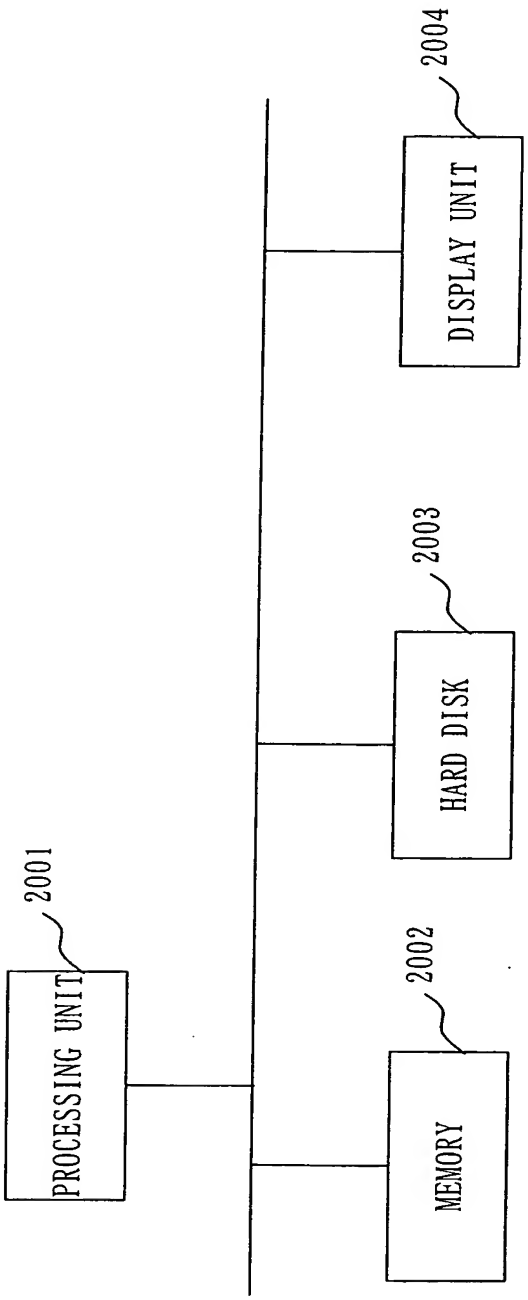

155
SEGMENT WIDTH IN WHICH TO TAKE MEAN
INTERMEDIATE TIME SERIES LENGTH p

Fig. 19

INTERMEDIATE TIME SERIES STARTING POINT	EIGEN-VALUE (s_1)	VALUE OF ELEMENT OF u_1	EIGEN-VALUE (s_2)	VALUE OF ELEMENT OF u_2	...	EIGEN-VALUE (s_8)	VALUE OF ELEMENT OF u_8
1	2904.518	0.04495	458.845	-0.05151	...	...	...
2	2904.518	0.04497	458.845	-0.05616	...	...	...
...	...	...	...	...	...	...	...
150	2904.518	0.04350	458.845	0.04443	...	...	...
...	...	...	...	...	...	...	...
m-n	2904.518	0.04371	458.845	0.02856	...	...	...
m-n+1	2904.518	0.04385	211.45	0.01931	...	...	...

Fig. 20


2004
DISPLAY UNIT
2003
HARD DISK
2001
PROCESSING UNIT
2002
MEMORY